

Patent claims

1. A clamping device, for a traction means (4) of a
5 traction mechanism (2a) whose rotatably mounted roller
(6a) which is connected to a spring means (11a) bears
in a frictionally locking fashion against the traction
means (4), the traction mechanism (2a) which is
10 assigned to an internal combustion engine including a
drive and an output of a starter generator (26),
characterized in that the clamping device (1a) is
assigned a pivotable roller lever (7) which is
supported on a spring means (11a) and on which the
15 roller (6a) is positioned, and the spring means (11a)
is also connected to an actuating lever (10a) which, by
means of an actuator (18) in conjunction with a
controller (20), pivots the actuating lever (10a)
between at least two positions, as a function of an
20 operating state and/or at least one operating parameter
of the internal combustion engine.

2. The clamping device which prestresses a traction
means (4) of a traction mechanism (2b), a rotatably
mounted assembly which is supported by a spring means
25 (11b) being provided as a clamping device (1b) and its
roller (6b) bearing in a frictionally locking fashion
against the traction means (4), the traction drive (2b)
which is assigned to the internal combustion engine
including a drive and output of the starter generator
30 (26), characterized in that the spring means (11b) is
connected at one end to the starter generator (26) and
at the other end to a pivotably arranged actuating
lever (10b), an actuator (18) pivoting, in conjunction
with a controller (20), the actuating lever (10b)
35 automatically between at least two positions or end
positions as a function of an operating state and/or at
least an operating parameter of the internal combustion
engine.

3. The clamping device as claimed in claim 1 or as claimed in claim 2, the actuating lever (10a, 10b) being pivotable between a first position, corresponding
5 to a starting mode, and a second position, corresponding to a generator mode, of the starter generator (26).

4. The clamping device as claimed in claim 1, the
10 actuator (18) pivoting the actuating lever (10a) between a plurality of positions which are determined as a function of the operating state of individual assemblies and/or operating parameters of the internal combustion engine.

15 5. The clamping device as claimed in claim 1 or as claimed in claim 2 which has an actuating lever (10a, 10b) with two support faces (14a, 14b; 15a, 15b) which are at an angle with respect to one another and which,
20 in conjunction with reference faces (16a, 16b; 17a, 17b) of a housing (24) of the internal combustion engine, ensure defined end positions of the actuating lever (10a, 10b).

25 6. The clamping device as claimed in claim 1 or as claimed in claim 2, the actuating lever (10a, 10b) being adjustable by means of an electrically actuated actuator (18).

30 7. The clamping device as claimed in claim 1 or as claimed in claim 2, the clamping lever (10a, 10b) of which interacts with a pneumatically acting actuator (18).

35 8. The clamping device as claimed in claim 1 or as claimed in claim 2, a hydraulically acting or electro-hydraulically acting actuator (18) adjusting the actuating lever (10a, 10b).

9. The clamping device as claimed in claim 8, in which, for the purpose of hydraulic actuation, a lubricant circuit or a pressurized circulation
5 lubrication system of the internal combustion engine acts on the actuator (18) and triggers adjustment of the actuating lever (10a, 10b) in conjunction with the controller (20).

10 10. The clamping device as claimed in claim 1 or as claimed in claim 2, the control process (20) of which includes signal processing with at least one sensor (21a, 21b) which actuates the actuator (18) as a
15 function of operating states of an assembly and/or operating parameters of the internal combustion engine.

11. The clamping device as claimed in claim 2, with a spring-damper unit being used as the spring means (11b).

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12. The clamping device as claimed in claim 1, to which a hydraulically acting spring means (11a) is assigned.

25 13. The clamping device as claimed in claim 1, the roller lever (7) of the clamping device (1a) being pivotable about a rotational axis (8) on which the rotatable roller (6a) which is assigned to the traction means (4) is positioned.

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14. The clamping device as claimed in claim 13, each apex of the triangular roller lever (7) being assigned in each case one of the components of the roller (6a), spring means (11a) and rotational axis (8).

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15. The clamping device as claimed in claim 1 or as claimed in claim 2, in which an offset "S₁, S₂" occurs between an articulation point (12, 22) for the spring

means (11a, 11b) and a pivot (13, 23) of the actuating lever (10a, 10b) irrespective of the end position or position of the actuating lever (10a, 10b).

5 16. The clamping device as claimed in claim 1 or as claimed in claim 2, an angle of inclination which influences the offset " S_1 , S_2 " between the articulation point (12, 22) and the pivot (13, 23) of the actuating lever (10a, 10b) being set between the support faces
10 (14a, 14b; 15a, 15b) of the actuating lever (10a, 10b) and the reference faces (16a, 16b; 17a, 17b) of the housing (24).

15 17. The clamping device as claimed in claim 1, an axial offset " L_1 , L_2 " being set between the rotational axis (8) and the articulation point (9) for the spring means (11a) irrespective of the position of the roller lever (7).